Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1-17 (cancelled)

18. (currently amended) A method of simulating a missile by means of a missile simulator in a single aircraft during testing of [[an]] the single aircraft which includes a weapon system for controlling missiles with which the aircraft may be equipped, the method comprising:

    i) generating in the missile simulator a target seeker command position for a simulated target seeker, whereby the simulated target seeker is commanded to adopt a predetermined position, wherein the simulated target seeker is assumed to move at finite speeds and that its movement is constrained to a single plane;

    ii) receiving the target seeker command position from the missile simulator at the weapon system;

    iii) simulating behavior of the missile in a computer model in the missile simulator to generate an actual value signal adapted to the weapon system;

    iv) generating in the weapon system a trouble signal from a deviation between the target seeker command position and the actual value signal, wherein the trouble signal is measured continuously and wherein sampled values for a vector indicating error in amplitude (A) and error in phase angle (φ), which represent a difference between a vector

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S^C corresponding to the target seeker command position and a vector S_O corresponding to the actual value signal, are determined and sent to the computer model in the missile simulator, and wherein the values for A and φ are determined by correlating measured results with known desired results;

v) using the trouble signal as a control signal for the simulated target seeker; and

vi) repeating steps iii) - v).

19. (cancelled)

20. (previously presented) The method in accordance with claim 18, wherein for each trouble signal, the computer model determines a corresponding actual value signal.

21. (previously presented) The method in accordance with claim 20, wherein for each trouble signal the computer model determines a new vector S^C including an amplitude and a phase angle of the new target seeker command position.

22. (previously presented) The method in accordance with claim 20, wherein a time-continuous actual value signal is reproduced from a time-discrete vector from the computer model.

23. (currently amended) A method of simulating a missile <u>using a missile simulator in a single aircraft</u> comprising

in [[a]] <u>the</u> missile simulator, receiving a signal representing a deviation of a

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simulated target seeker from a commanded position of the simulated target seeker,

simulating a behavior of the missile in a computer model using the signal representing a

deviation of the simulated target seeker from a commanded position of the simulated

target seeker to generate an actual value signal adapted to an aircraft weapon system for

controlling missiles, and transmitting the actual value signal to the weapon system; and

in the aircraft weapon system for controlling missiles, receiving the actual value

signal and generating a signal representing a deviation of the simulated target seeker from

a commanded position of the simulated target seeker using the received actual value

signal; and

using the generated signal representing a deviation of the simulated target seeker

from a commanded position of the simulated target seeker to control the simulated target

seeker.

24. (previously presented) The method in accordance with claim 23, wherein for each

signal representing a deviation of the simulated target seeker from a commanded position

of the simulated target seeker, the computer model determines a corresponding actual

value signal.

25. (previously presented) The method in accordance with claim 20, wherein for each

signal representing a deviation of the simulated target seeker from a commanded position

of the simulated target seeker the computer model determines a new vector S^C including

an amplitude and a phase angle of the new target seeker command position.

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26. (previously presented) The method in accordance with claim 20, wherein a time-continuous actual value signal is reproduced from a time-discrete vector from the computer model.

27. (previously presented) A missile simulator apparatus used in a single aircraft comprising:

computer circuitry operable to run a computer model of a missile, including a model simulating a target seeker of the missile, the computer model operable to accept a signal representing a deviation of the simulated target seeker from a commanded position of the simulated target seeker, the computer model further operable to output a signal representing an actual value of a position of the simulated target seeker; and

interface circuitry communicatively connectable between the computer circuitry and a weapons system of an aircraft, the interface circuitry operable to accept the signal representing the actual value of the position of the simulated target seeker from the computer circuitry and to output a signal compatible with the weapons system of the aircraft representing the actual value of the position of the simulated target seeker, the interface circuitry further operable to accept from the weapons system of the aircraft a signal representing the deviation of the simulated target seeker from the commanded position of the simulated target seeker and to output to the computer circuitry a signal compatible with the computer circuitry representing the deviation of the simulated target seeker from the commanded position of the target seeker.

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28. (previously presented) The apparatus of claim 27, wherein:

the signal compatible with the computer circuitry representing the deviation of the

simulated target seeker from the commanded position of the target seeker comprises a

signal representing a deviation in amplitude and a deviation in phase angle.

29. (previously presented) The apparatus of claim 28, wherein:

the signal compatible with the computer circuitry representing the deviation of the

simulated target seeker from the commanded position of the target seeker is a sampled

signal.

30. (previously presented) The apparatus of claim 29, wherein:

the computer circuitry is further operable to calculate a new signal representing an

actual value of a position of the simulated target seeker for each sample value of the

signal compatible with the computer circuitry representing the deviation of the simulated

target seeker from the commanded position of the target seeker.

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